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REMARKS

The Examiner has rejected claims 1, 2 and 7-9 under 35 U.S.C. § 103(a) as being unpatentable over Andersen in view of Japanese Patent 64-53,002 and Chandley and claims 1, 6, 7 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Andersen in view of Japanese Patent 64-53,002 and Craig. These grounds of rejection are respectfully traversed.

Andersen discloses an airfoil having a thin sheet metal sleeve 58 that completely surrounds the airfoil tip. The sleeve 58 is bonded to ribs 55 formed in the airfoil by brazing or welding. As recognized by the Examiner, the sleeve 58 is not made of a "high temperature foil" as that term is defined in the present specification. The Examiner also concedes that the sleeve 58 does not have a first end adjacent to the leading edge and a second end adjacent to the trailing edge.

The Examiner contends that it would have been obvious to form metal sleeve 58 of Andersen from the alloys taught by either Chandley or Craig. The Examiner further contends that it would have been obvious to select the thickness of the modified sleeve to a specific value, such as about 0.51 mm. The reasoning for the latter contention is that 1) applicant has not disclosed that such a specific thickness is critical or solves any stated problem, and 2) it appears that the modified airfoil of Andersen would perform equally well with metal sleeves of differing thicknesses. Applicant respectfully submits that neither of these reasons provides a sufficient basis to support the Examiner's rejection. It is well settled that there must be some suggestion or motivation to modify a reference to establish a *prima facie* case of obviousness (see MPEP 2143). This motivation must come from the prior art references or in the knowledge generally available to one of ordinary skill in the art. In the present case, neither the references nor generally available knowledge provides the motivation to modify the sleeve 58 to a specific thickness. The alleged failure of applicant to disclose the criticality of

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the thickness does not provide the required motivation. While in some instances an applicant can rebut a *prima facie* case of obviousness by demonstrating the criticality of a specific limitation (see MPEP 2144.04 and 2144.05), the lack of a criticality showing does not automatically make a limitation obvious. If this were the case, then any claim limitation not shown to be "critical" would be obvious. The Examiner's assertion that the modified airfoil of Andersen would perform equally well with metal sleeves of differing thicknesses also does not make the proposed modification obvious. The fact that a reference can be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the modification (see MPEP 2143.01, citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Here, there is no suggestion or motivation in the prior art that the metal sleeve 58 of Andersen could be modified into a high temperature foil.

Regarding the failure of Andersen to disclose an outer wall having a first end adjacent to the leading edge and a second end adjacent to the trailing edge, the Examiner contends that it would have been obvious to form the sleeve 58 of Andersen such that a first end is adjacent the leading edge and a second end is adjacent the trailing edge, as taught by the Japanese patent. However, applicant respectfully submits that the Japanese patent does not clearly teach an outer wall having ends adjacent to the leading and trailing edges. The Japanese patent discloses a turbine blade in which a number of grooves 2 cut in the surface. Then, a covering member 3 is joined to the surface of the blade to close the grooves. Applicant submits that it is not clear if Figure 1c shows two covering members (one on the suction side, one on the pressure side) or a single covering member that wraps around the blade 1 and is simply extremely thin over the leading and trailing edges. The English-language abstract clearly describes a single covering member 3 closing the grooves 2. Also, applicant submits that Figure 1c cannot be fully relied on because it appears to show that the covering

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member on the suction side does not cover the groove closest to the trailing edge, which is clearly contrary to the intent of the patent.

Nevertheless, even if the Japanese patent does teach a covering member having a first end adjacent to the leading edge and a second end adjacent to the trailing edge, there is still no teaching or suggestion in the prior art of using a high temperature foil.

For the above reasons, it is respectfully submitted that independent claims 1 and 7 are allowable over Andersen in view of the Japanese Patent and Chandley and Andersen in view of the Japanese and Craig. Claims 2, 6, 8, 9 and 12 depend from claim 1 or 7 and are thus also believed to be allowable.

The Examiner has rejected claims 4 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Andersen in view of Japanese Patent 64-53,002 and Chandley and further in view of Mizuhara and claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Andersen in view of Japanese Patent 64-53,002 and Craig and further in view of Mizuhara. These grounds of rejection are respectfully traversed.

The Examiner relies on Mizuhara for teaching a brazing alloy having chromium, palladium and nickel and asserts that it would have been obvious to use such a brazing alloy in Andersen. However, even if the prior art combinations were modified to use the Mizuhara brazing alloy, there is still no suggestion in the prior art that the metal sleeve 58 would be a "high temperature foil" as that term is defined in the present specification. Accordingly, the proposed combinations with Mizuhara would not render independent claims 1 and 7 unpatentable. Claims 4 and 10, which depend from claim 1 and 7, respectively, are thus also not rendered unpatentable.

The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Andersen in view of Japanese Patent 64-53,002, Chandley and Mizuhara and further in view of Lee '102 and under 35 U.S.C. §

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103(a) as being unpatentable over Andersen in view of Japanese Patent 64-53,002, Chandley and Mizuhara and further in view of Lee '102. These grounds of rejection are respectfully traversed.

Lee ('102) is cited for a teaching of using a nickel-base superalloy, but does not teach or suggest an outer wall comprising a "high temperature foil" as that term is defined in the present specification. Accordingly, the proposed combinations with Lee ('102) would not render independent claim 1 unpatentable. Claim 5, which depends from claim 1, is thus also not rendered unpatentable.

The Examiner has rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Andersen in view of Japanese Patent 64-53,002, Chandley and Mizuhara and further in view of Lee ('102). This ground of rejection is respectfully traversed.

Lee ('102) is cited for a teaching of using a nickel-base superalloy, but does not teach or suggest an outer wall comprising a "high temperature foil" as that term is defined in the present specification. Accordingly, the proposed combinations with Lee ('102) would not render independent claim 7 unpatentable. Claim 11, which depends from claim 7, is thus also not rendered unpatentable.

In view of the above, it is submitted that the claims are in condition for allowance. Reconsideration of the objections and rejections is requested. Allowance of claims 1, 2 and 4-12 at an early date is solicited.

Respectfully submitted,

1/6/04

Date

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